

KARBONMONOKSİT ZEHİRLENMESİNİN **KARDİYAK ETKİLERİ**

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Giriş

Karbonmonoksit (CO), endüstriyel üretim ve yaşam alanlarında enerji kaynağı olarak kullanılan araçların, motorlu vasıtaların karbon bazlı yakıtlarının ve tütün ürünlerinin artışı olarak ortaya çıkan renksiz, kokusuz, zehirli bir gazdır. CO zehirlenmesi önlenemez bir ölüm ve sakatlık sebebi olarak halk sağlığı açısından güncelliğini korumaktadır. CO zehirlenmesi sebebiyle Amerika Birleşik Devletleri'nde yıllık 50.000 hastanın acil servislere başvurduğu ve 2700 ölüm gerçekleştiği bildirilmiştir.⁽¹⁾

CO, doğrudan hücresel düzeyde toksisite ve moleküler düzeyde yaşamsal değeri bilinen oksijenin (O₂) bağlanma noktalarına O₂'den daha güçlü bağlanarak O₂ taşınması ve depolanmasının engellenmesi sonucu hücre düzeyinde oluşturduğu asfiksiyle doku ve organ sistemleri üzerinde etkilerini göstermektedir. Kardiyovasküler sistem üzerindeki, aritmojenik, hemodinamik ve iskemik etkiler ise CO'nun nörolojik etkileri kadar henüz kapsamlı anlaşılamamıştır.

Endojen Karbonmonoksit Üretimi ve Karbonmonoksit Zehirlenmesinde Aritmiye Yatkınlık

İnsanlarda hücre metabolizması, doku veya organ sistemlerinde nitrik oksit (NO), hidrojen sülfitle (H₂S) birlikte, üçlü gaz sinyal moleküllerinden biri olan CO, hemoglobin (Hb) yıkımı sırasında endojen olarak da üretilmektedir.^(2,3) Vasküler sistem için her üç gazın ortak özelliği vazodilatasyon sağlamalarıdır. Anjiyogenezde kritik rol alan endojen CO, anti-enflamatuvar özellikleri yanında miyokardiyal hasar açısından kardiyak protektif bir mediyatör olarak da tanımlanmıştır.⁽³⁾

Endojen üretim ile oluşan karboksihemoglobin (COHb) düzeyi, %1 seviyesini geçmemektedir. Eritrosit yıkımı ile sonuçlanan hemolitik anemi veya sepsis tablosu geliştiğinde ise COHb %3-4'e kadar çıkabilir⁽⁴⁾. Aksiyon potansiyellerinin oluşabilmesi ve oluşan elektriksel uyarı ile miyokardiyal kontraksiyonun başlatılması

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